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The Next 4 Years: Q&A With Clinton's Science Chief

John Gibbons, Assistant to the President for Science and Technology and Director of the White House Office of Science and Technology Policy, talked to SGR Editor Greenberg on October 28. Following is the text, transcribed and edited by SGR.

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SGR. *What are the priorities for the next four years?*

Gibbons. I can speculate a little bit. It may sound like a broken record, but if you raise the words "energy policy," people either yawn or walk away from you. But if you think about it, everything comes back to energy: our global environmental strategies, our national economy, local and regional air pollution, the notion of moving toward a more resource-efficient society, national security in terms of the Middle East, the burgeoning requirements of the Third World, especially the Asian rim—everything comes back to energy. There's also the open sore of the non-closed nuclear-fuel cycle, the disposition of nuclear-weapons materials, and the role of research and the handoff between basic research and applied research. So, I think that these are all very important things for us to be spending more time on in the coming four years. It is a kind of core curriculum. Also, I hope we can move away from partisan fights and more toward an emerging bipartisan consensus on the public- versus the private-sector roles in research and development, and the kind of mechanisms for cooperation.

Top Universities Maintain Lock On Federal Research Funds—P. 6

SGR. *The next Congress, whoever controls it, is likely to be more cooperative.*

Gibbons. I hope we can move back as quickly as possible to a strong bipartisan understanding and therefore support of investments in research. We had a terrible time with the 104th, and there was a lot of blood on the floor. It was not a pleasant time.

SGR. *For the next State of the Union, do you see any big research initiatives?*

Gibbons. Anything new you start, you've got to stop something else.

SGR. *Are we going to continue in that same zero-sum environment?*

Gibbons. It's either that or productivity gains. Both are real options. In terms of major expansions of budgets, I would love to be more optimistic than I feel I can be honestly at this point. We have to face the hard arithmetic of the budget squeeze and what it portends for us. If we decide as a nation to trim our so-called entitlement programs, that would provide some relief to the discretionary budget, which includes all our research funding. That's one possibility. We may want to go that way. But politically, it's extremely difficult to go after the entitlement programs.

SGR. *Can the big research universities look forward to any kind of relief from Washington? Or will they continue to have to live with the austerity of the last few years?*

Gibbons. I think the social contract between the federal government and the university community, including the academic health centers, is one that does need careful attention. The President has requested a review of the relationship between the federal government and these institutions, because it's been historically such a strong and important partnership. We hope to have that completed by June of next year and we're going to give it very serious attention. We're going to look at each of the federal agencies

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In Brief

The Clinton campaign was quick off the mark last month when the Nobel prizes in physics and chemistry were announced. All five recipients had at one point or another received federal grants, President Clinton declared while stumping in Tennessee, where he and Al Gore warned that a GOP victory would doom the Oak Ridge lab and produce other misfortunes for research.

NSF did its part, too, with the Nobel five coming to Washington at the invitation and expense of the Foundation for a day of meetings with the press, plus the NSF staff and Board and a radio talk show. The main message was that US science needs help if more Nobels are to be won.

The President also latched onto cancer research in exercising the wondrous power of incumbency in the final days of the campaign. In a Rose Garden ceremony October 27, Clinton announced that $30 million in new money would be provided for research on hereditary factors in breast cancer—with $10 million provided by NIH and $20 million by the Defense Department.

As in other areas, Chinese abuses of human rights are no impediment to cozier research relations with the US. The latest addition to the small but growing R&D collaboration sponsored by the two governments is a Civilian Industrial Technology Initiative, designed to swap information and promote partnerships and business opportunities. The Initiative was signed in Washington October 24 by Mary Good, head of the Commerce Department's Technology Administration, and Wang Zengrong, Minister Counselor for Science and Technology. Chinese tech abstracts and policy papers, in English, are on the US Tech Administration's home page at: <http://www.ta.doc.gov/aptp/china/cea.htm>.

. . . Money Problems Dominate All Programs, Plans

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and their relationships. We're talking with university people about what more can be done to make life easier, to make overhead less costly, regulatory reform.

SGR. *They say, "Send money."*

Gibbons. Yeah, you can send money, but you can also cut down on regulations and some other things. And we really want to work on this, because that relationship is an extremely important one, because it has the dual advantage of people development as well as research.

SGR. *The money problem hangs over everything.*

Gibbons. It is the *sine qua non* of thinking about everything. The question, as we move toward [the budget for] '98 is whether we can continue our squeeze on the deficit and at the same time build defenses around these pieces of the discretionary budget. As [Senator] Mark Hatfield points out, if the whole discretionary budget is going to bear the brunt of budget balancing, and if it's only one-sixth of the whole budget, headed for one-seventh, arithmetic teaches you there's just a lot of pain out there still.

SGR. *Looking at NASA, for example, the GAO and others say it can't maintain the program with the budget cuts planned for 2002. What do you do? Change the program or get more money?*

Gibbons. The astronomers have produced a consensus document on research in astronomy, in which they came up with not only identifying important programs, they even serially prioritized what they felt across a whole bunch of disciplines within their framework of astronomy. We are basically trying to get that same kind of information out of the rest of the scientific community. For NASA, we hope the Vice President can get briefed up on it in November, early December. And then we will have a much firmer basis in early January for a summit between the bipartisan group from both sides of the aisle in Congress and the Administration to really think about NASA's budget, not just for '98 but what it portends out there through the turn of the century. What we're going to try to do in that summit is to define a path that has a reasonably well-behaved function over time, because continuity is as important sometimes as the number itself—whether you can count on a level over time.

SGR. *But the NASA program cannot be sustained with the present financial plan.*

Gibbons. The present program includes a bunch of new things coming up. And if you take the sum of all the new things we'd like to do, it's greater than the sum that presently looks like it may be available. And that means we either have to shift some resources into that or stop something that is ongoing now or defer or do something else to the new starts.

SGR. *The stops and the deferrals have all pretty well been done.*

Gibbons. We've had a lot of them. But how many Americans know that we have two probes headed for Mars in the next three to four months? There's a lot of stuff going on out there that represents really elegant science and exploration but at a very much lower cost. There's a real test on how much farther we can go with the change of operations of NASA's centers, of the Shuttle itself. The outcome over a long period of time isn't discernable yet.

SGR. *Has the International Space Station been ratcheted down to the point where there are no more savings to be had?*

Gibbons. The International Station has been sort of squeezed and pushed and pulled. I would be very surprised if we can find any additional savings there. [NASA Administrator] Dan Goldin feels that if we try any further there, that we're really endangering the whole thing. And it's dangerous enough. We're trying to work in a politically turbulent time with the Russians and others, including the Europeans, as well. So, I don't see a lot of opportunity there for savings, because we've already gone to a level budget on it.

SGR. *NIH is a contrast. The budget growth there roars along, almost like in the good old days. Does this have an effect on the surrounding environment for the other research agencies?*

Gibbons. I keep holding it up, saying, if you folks could do as good a job as these NIH folks in making the general public aware of the relevance of this work to their lives or to their kids' lives, then you, too, will see this kind of extraordinary support. I think that's one of the biggest differences—people may not understand molecular biology, but they've got a good feeling it's going to help them down the road. You don't have to understand, but you have to be convinced of its relevance. In other areas of science, that's a little harder to do. NIH has strong bipartisan support, but we have to remember that when we add extra dollars there, they've got to come from somewhere else, probably within the research community, maybe even within HHS [Health and Human Services, parent Department of NIH]. So, there's not an extra bucket of cash out there that people are dipping into. It's simply moving the cash around.

SGR. *Is it prudent to raise the budget in that particular sector 6-7 percent a year while others are standing still or falling back?*

Gibbons. I think we have to be careful about just simply pouring in money. Sometimes we do get skewed by the idea

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. . . Foresees Bigger Role for Agricultural Research

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that more money will make things happen faster. Science doesn't always work that way. At the same time, fundamental molecular biology, neuroscience and other fields are enjoying an extraordinary burst of productivity and advancement. So, it would be tough for me to judge that it's not a good idea to continue to put heavy resources in that area.

SGR. *Can NIH make good use of an additional $800 million in one year?*

Gibbons. I think that's a real big question for [NIH Director] Harold Varmus. You have to say $800 million compared to what? Compared to a budget that's already more than ten times that. Look at Japan—doubling their support of research over a five-year period.

SGR. *Agricultural research did better this year than in the recent past. But over the last few years, it's been declining.*

Gibbons. It's going to get more important as time goes on. We were very encouraged by the outcome in Congress, because the early Budget Resolutions just diced up agricultural research. We feel it's very important, because we're moving faster than we thought toward a time in which biotechnology is really going full bore into very complicated plants and even animals, a lot faster than people expected. And that affords us a number of very important opportunities, and we need to know what we're doing there. We're moving toward a situation in which a lot of genetically engineered organisms and plants and animals are entering the food chain. The opportunities are enormous for everything from pest resistance to nitrogen-fixing to all sorts of things, and that's going to be not only important to us but as an export technology to China and other countries.

SGR. *The senior research post in the Department of Agriculture, Under Secretary for Research, Education and Economics, has been filled on an acting basis throughout most of this Administration—no full-fledged appointee in the job.*

Gibbons. We have a lot of acting people—we haven't been able to get the names through Congress. I have two of my four Associate Directors who are only acting because of that. I hope we can get all those positions filled.

SGR. *Nonetheless, the agricultural research community feels that it's the orphan among the sciences in Washington.*

Gibbons. I don't think the agricultural community should regard itself an orphan. Look at the support we've given to this expansion of their research capabilities. But we have to constantly understand, in agriculture as in these other areas, that we're playing nearly a zero-sum game. If you want to take on something new, you've got to give up something old.

SGR. *Agricultural research has always been the smallest of the big research agencies.*

Gibbons. It has been small, it's true, in a way because we now float on the benefits of prior investments, which in turn have created an industry, a private-sector group that does a lot of funding in new product development, new farming methods. In agriculture, in the Department of Transportation and also in Housing and Urban Development, the Secretaries really want to do more research. But we've had people rebuffed in Congress. For example, Federico Pena [Secretary of Transportation], without increasing his budget, bundled a bunch of activities from within his Department and created a very significant research component. And the Congress killed it. So, here's the good guy who's getting penalized for trying to create a stronger research activity. I would hope we could pass some of that in the coming Congress.

SGR. *Everybody loves NSF, but—*

Gibbons. Not as much as NIH, maybe, but, yeah, you're right.

SGR. *—not enough to give that budget a big increase, like NIH. NSF has been held to around the inflationary level.*

Gibbons. Three to four percent. If you look at the stakeholders and the voices of support for NIH, they include not only the academic health centers and the like, but also a widespread industrial group that strongly supports NIH's activities. If you look at NSF, it doesn't have that kind of industry support. It's much more diffused across a lot of different areas, and therefore the stakeholder group is different. Then look at the Appropriations Committees and their stakeholder groups. If you take NSF, they're loaded in [an Appropriations Subcommittee] with the Veterans Administration, Housing and Urban Development, EPA, NASA. And so NSF has a lot of competing activities with very strong stakeholder groups. That's why we've been urging the academic community to help educate their Members [of Congress] on the relevance and value of research. The Appropriations Committee people say, "How many letters do we get from people about NSF compared to the Veterans Administration? We'll tell you where the letters are coming from." And that's the reality of some of the competition that Congress faces in trying to make these allocations.

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Clinton: Need More R&D

"We're way underinvesting in research and technology, I believe," and "in the next four years we ought to do more in research generally," President Clinton said last June in an interview with editors of the *Atlantic Monthly*, published in the October issue.

The President specifically mentioned biomedical, energy and environmental research as areas that merit increased support. Citing the later two as essential for economic growth, he said, the *Atlantic* reported, "that he will try to make the case for 'a dramatic increase' in research spending by 'elevating the argument that I've been making that economics is part of our national security.' "

. . . Congress Hurt by Absence of OTA, Gibbons Says

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SGR. *What's the future for the Applied Technology Program [ATP]?*

Gibbons. This came out extraordinarily better than was originally intended in Congress. They wanted to zero it out along with the Department of Commerce. It now gives us a chance with this relatively small experiment—it's a fraction of the budget of one of our big national labs—to try out some experimental ideas. And I think in the coming two-three years, we ought to have enough evidence of these things to be able to apply more than an anticipatory guess. We ought to see how it's working. I think we ought to treat it as an experiment.

SGR. *ATP is an experiment?*

Gibbons. Actually, ATP is an experiment that has a time constant roughly associated with industry new starts, and that's typically about seven years. I don't think it ought to be a massive program, but certainly at this level, it's a minor experiment in our whole portfolio.

SGR. *In the Administration's original design, ATP would be at about half a billion now.*

Gibbons. It could be half a billion, and that's half of one big lab's budget—only one big lab's budget.

SGR. *Speaking of the national labs, it's been said for at least 20 years that many have outlived their purposes and should be scaled down or eliminated. But they're still there.*

Gibbons. There's been talk for 20 years from Dave Packard onward [of Hewlett Packard, who chaired a study for the Reagan Administration], and before him and after him, every time there's been a high-level review, the results are that they may be expensive, but they're not that expensive, and there's a lot of absolutely essential work going on there, and be very careful about how you muck around with the labs. But the labs are changing. Many of the big labs, even the Defense labs, are down 15-20 percent in employment over the past three or four years. So, there is motion there. It's not lightning strikes, but there's real motion.

SGR. *The latest big study [chaired by Robert Galvin, former CEO of Motorola] was politely accepted by the Secretary of Energy, but very little has come of it.*

Gibbons. Bob Galvin had some very good ideas, but there were also some observations in there, such as multi-year block funding without line items, which you wouldn't call necessarily dead on arrival, but it would be an extremely unusual political situation for something like that to actually happen. But a lot of Galvin's ideas are actually taking root in the labs.

SGR. *Like what?*

Gibbons. For instance, the downsizing and elimination of a lot of middle levels of management—administrative things, where we're trying to hold on to the number of people at the bench while we're getting rid of all the other folks that are in the so-called administrative chain. I think there are important opportunities there, not only in DOE, but in the other agencies. Some early buyouts are working, and Congress has finally come to help us out in providing for buyout capabilities.

SGR. *Research issues were constantly getting entangled in ideological fights in the last Congress.*

Gibbons. It was an interesting learning experience for the whole nation. A lot of wasted energy, because people were shouting past each other, and there were a lot of people [in Congress] making decisions that just hadn't been there before. It again reminds us that our citizen-governors up there, those elected representatives, need the benefit of the folks back home to help them get information. They need an OTA-type organization [Congressional Office of Technology Assessment, headed by Gibbons prior to his White House appointment, and abolished by the Republican majority in the last Congress]. The loss of OTA and the loss of some of these other mechanisms for getting trustworthy information—we shot up a lot of ammunition we didn't need to shoot. The quality of preparation of Congressional hearings suffered. They even had to harken back and pick up old OTA reports, like the OTA study of taggants for explosives. But beyond Congress, OTA provided the American people and various institutions—universities, business, others—with information they had not had. That's a loss not so much directly to Congress but to the nation as a whole.

SGR. *Your own plans—will you stay on if asked?*

Gibbons. I haven't been asked. If asked, I'm inclined to be very positive in my response to it. I did renew the lease on my apartment [in downtown Washington].

Job Changes & Appointments

Bennett I. Bertenthal, Professor of Psychology at the University of Virginia, has been appointed head of the Directorate of Social, Behavioral and Economic Sciences at the National Science Foundation, succeeding ***Cora B. Marett***, who returned to the University of Wisconsin-Madison in September after four years as the first head of the Directorate. Bertenthal will come aboard in January, and until then, the post will be filled on an acting basis by ***Jeff Fenstermacher***, Executive Officer of the Directorate since 1991. Bertenthal's field of research is the development of perception and action in infants and adults. In the recently departed Congress, the social sciences at NSF were harassed by Republicans as left-wing and of little use. But with the retirement of Science Committee Chairman Robert Walker, the main source of animosity is gone. The appointment is at the discretion of the NSF Director, and does not require Congressional approval.

Lee S. Shulman, Professor of Education at Stanford Univ., has been appointed President of the Carnegie Foundation for the Advancement of Education, which is moving in August from Princeton, NJ, to Palo Alto, Calif. Until then, ***Charles E. Glassick*** will continue as interim President. Shulman succeeds ***Ernest Boyer***, who died in December.

Non-Profit Pay Checks

The Heritage Foundation

In income, influence and output, the past few years have been bountiful for the Heritage Foundation, the Washington-based policy center that Newt Gingrich once called "the most far-reaching conservative organization in the country in the war of ideas."

Others regard it as a raucous right-wing drumbeater in the guise of a scholarly institution, with the fiscal benefits of tax-exempt, non-profit status. There's no disputing, however, that the Heritage Foundation was the foremost think tank for the Republican takeover of Congress in 1994. As the ideological tides recede, the extent and durability of its influence are uncertain, but at the moment, it is a very robust organization. The Heritage revenues have steadily risen, from $19.1 million in 1991 to $28.8 million in 1995, the year of the Foundation's most recent tax filing under its IRS 501(c)(3) tax-exempt, non-profit status. Some 200 new books and pamphlets a year bear the Heritage imprint, while at headquarters on Capitol Hill and around the country it annually puts on some 900 conferences, seminars and lectures.

In the upper echelons of the Foundation, the pay is top-notch, with President and CEO Edwin J. Feulner Jr. receiving a compensation package totaling over $400,000 a year.

Pay scales are also generous for the senior staff and for several political has-beens from past Republican Administrations who hold appointments at Heritage headquarters. These include Edwin Meese, of Reagan-era renown, and William Bennett, the moralizing former Secretary of Education and "drug czar"—both listed as "distinguished scholars," at over $200,000 apiece annually. The 1995 tax return also reports that Jack Kemp received $136,364 for "Public Policy Research." The Heritage staff numbers about 160, of whom 32 are paid over $50,000 year, according to the 1995 tax return.

Refusing contract work and government grants, Heritage has successfully pursued contributions with strong pitches of right-wing ideology to fat cats and the general public. And the money has poured in, much of it in modest sums from over 200,000 responses to persistent direct-mail campaigns. The big and little gifts from individuals comprise 52 percent of the budget; right-wing foundations provided 29 percent, while the balance came from publication sales, corporate gifts, income on investments, and rental of its right-leaning mailing lists.

As reported in the Heritage 1995 tax return, the pay package for President-CEO Feulner consisted of $215,212 under the heading "compensation base," plus $190,840 as a "bonus." In addition, Feulner received $52,292 in "benefits and deferred compensation" and $3496 for "expenses and other allowances, for a total of $461,840. In 1994, the package for Feulner added up to $439,538. In the non-profit leagues, that's top pay.

The 1995 tax return reports the following payments to senior officers, directors and trustees, in the sequence of compensation base, bonus, benefits and deferred compensation and, where applicable, expense account and other allowances:

Phillip N. Truluck, Executive Vice President, $161,982, $82,870, $16,722, $1090.

Stuart M. Butler, Vice President, $107,466, $31,450, $15,678.

Kim R. Holmes, Vice President, $92,979, $18,420, $11,695.

Herb Berkowitz, Vice President, $108,666, $32,260, $16,372.

Peter E.S. Pover, Vice President, $99,541, $21,870, $15,586,

John Von Kannon, Vice President, Treasurer, $116,491, $34,160, $16,722.

Adam Meyerson, Vice President, $96,653, $22,725, $12,716.

David M. Mason, Vice President, $81,847, $9100, $9004.

Lewis F. Gayner, Vice President, $117,839, 0, $3089.

In the category on the tax form for five highest-paid employes, other than officers, the 1995 Heritage return reported the following compensation and combined benefits and deferred compensation, with title of "Distinguished Scholar" and average hours per week listed as 40, except where indicated otherwise:

Edwin Meese, $213,591, $19,362.

William Bennett, $198,388, $17,292 (average hours per week, 30).

Marshall Breger, $136,423, $15,167.

David Winston, $103,439, $367.

Sharon Zelaska, Executive Assistant, $96,000, 933 (37.5 hours).

Jack Kemp's $136,364 was listed under the heading of payments to independent contractors—the others being legal, public relations, and direct-mail consultants. Kemp's services, according to a Heritage spokesman, consisted of "lecturing and public appearances" under Heritage auspices. At the time Kemp provided the services, he was co-director of Empower America, his homebase for a busy and lucrative schedule on the lecture circuit. Heritage's financial relationship with Kemp ended when he became the Republican Vice Presidential candidate, the spokesman said.

Heritage publishes a bi-monthly magazine, now called the *Journal of American Citizenship*, which reports a circulation of about 30,000. Among its top-selling books are the annual *Index of Economic Freedom* and *America's Failed $5.4 Trillion War on Poverty*.

Previous Pay Checks: Howard Hughes Medical Institute, April 15; National Academy of Sciences, May 1; American Chemical Society, May 15; American Psychological Association, June 1; American Association for the Advancement of Science, June 15; American Psychiatric Association, July 1; Association of American Medical Colleges, August 1; American Council on Education, September 15; Association of American Universities, October 1; Pharmaceutical Research and Manufacturers of America, October 15.

Next: American Medical Association

In Academic Research Funding, the Rich Get Richer

As federal funding for academic research gets tighter, the record of recent years suggests that those who have shall get even more, while the rest scramble for scraps.

SGR has been looking at the rankings of universities in total receipt of federal research and development funds in 1980 and 1994—the poles of a boom period in which the R&D flow from Washington to academe rose from $4.1 billion to $11.7 billion, in current dollars.

During that 15-year stretch, while many other things in America underwent drastic upheavals, the universities on top generally remained on top and few at the lower level ascended very far. There were some prominent exceptions: Harvard fell from 7th place in 1980 to 12th in 1994; the University of Michigan rose from 12th to 5th place, while the University of Chicago dropped from 17th to 29th place.

Overall, however, little movement occurred within the upper ranks, suggesting that the competitive system for awarding federal research funds reinforces the status of early arrivals. Whatever the governing factors, academic institutions have experienced nothing like the bloodletting that swept through industry and business in those same years as newcomers, in air travel, retailing, computers, and many other fields, rose from nowhere to top positions.

That riches bring riches is no discovery. But in this period of financial stagnation in Washington, there's an important message in the data, namely, that if institutional mobility was sluggish in boom times, it's now bound to be frozen for years to come—except for those fortunate very few universities that can muster big money from non-federal sources.

The numbers, taken from NSF's annual compilations of the top 100 universities in federal obligations for research and development, indicate durability not only in university standings, but also in the heavy shares of funding received by a small number of universities. In 1980, when the federal funding for academic R&D totaled $4.1 billion, the top 10 universities received $1 billion of that sum. In 1994, the total stood at $11.7 billion, and the top 10 received $2.7 billion. Federal funds for the top 50:

1980	(in millions of dollars)	1994	
1. Johns Hopkins	240	Johns Hopkins	612
2. MIT	141	U of Wash	276
3. Stanford	104	MIT	267
4. U of Wash.	100	Stanford	262
5. UC San Diego	90	U of Michigan	240
6. UCLA	87	UCLA	222
7. Harvard	84	UC San Diego	218
8. Columbia	81	U Wisc-Mad	207
9. U Wisc.-Mad	80	UC San Fran	204
10.Cornell	75	Cornell	194
11.U of Minn	75	U of Penna.	190
12.U of Michigan	71	Harvard	190
13.U of Penna	71	Columbia	187
14.Yale	68	Penn State	184
15. UC San Francisco	62	Yale	183
16. Wash. U (St. Louis)	52	U of Minn	180
17. U of Chicago	50	U of Colorado	166
18. U Ill.-Urbana	50	Duke Univ	154
19. UC Berkeley	50	U of Pittsburgh	153
20. Penn State	48	U of South. Cal.	150
21. U South Cal.	48	Wash. U (St. L.)	150
22. U Colorado	44	UC Berkeley	149
23. Duke Univ	42	UNC Chapel Hill	146
24. UC Davis	42	U of Arizona	144
25. UNC Chapel Hill	42	U of Ill.-Urbana	119
26. U of Rochester	41	U of Rochester	108
27. Yeshiva Univ	40	U Ala.-Birm.	104
28. U Texas-Austin	40	U Texas-Austin	103
29. New York Univ	39	U of Chicago	102
30. Ohio State Univ	37	Northwestern U	100
31. Purdue Univ	36	Case W. Reserve	99
32. U of Iowa	34	UC Davis	99
33. Cal. Inst. of Tech.	34	Baylor Coll. Med	98
34. U of Arizona	33	U of Iowa	94
35. U of Pittsburgh	33	New York Univ.	92
36. U of Utah	32	Ohio State Univ	92
37. Baylor Coll. Med	32	Vanderbilt Univ	87
38. Northwestern Univ	32	U of Utah	85
39. Case W. Reserve	31	Cal. Inst. of Tech	84
40. Oregon State Univ	29	Univ of Miami	83
41. Michigan State Univ	29	Indiana Univ	83
42. U of Miami	28	U Md.-Col. Park	80
43. Ga. Inst. of Tech	28	Purdue Univ	78
44. Texas A&M	27	Boston Univ	78
45. U of Ala.-Birm	27	U of Virginia	76
46. U Md.-Col. Park	26	Emory Univ	75
47. Indiana Univ	26	U of Florida	73
48. Vanderbilt Univ	26	Texas SW Med	72
49. U of Florida	25	Yeshiva Univ	71
50. Boston Univ	25	Louisiana State	68

Sources: *Federal Support to Universities, Colleges, and Selected Nonprofit Institutions: Fiscal Year 1980* and same title for *Fiscal 1994* (National Science Foundation, Division of Science Resources Studies). Data also on the Internet: <http://www.nsf.gov/sbe/srs/stats.htm>.

NAS Reviews Math Research

Mathematics has been selected as the first discipline in what is described as an "experimental study" of the US standing in research in comparison to other nations. The study, to be conducted by the National Academy of Sciences' Committee on Science, Engineering and Public Policy, arises from a 1993 COSEPUP recommendation for field-by-field studies to assure US leadership or front-line status in major fields of research. The math study, announced October 22, is chaired by Peter D. Lax, Director of the Courant Laboratory at NYU. Deborah Stine is the NAS Study Director.

In Print

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From the American Institute of Physics (AIP), no charge:

What Are Masters Doing? Masters Degree Recipients with Physics Training in the Work Force: The Impact of Highest Degree Field and Employment Sector on Career Outcomes (Publication R-398.1; 28 pp.), against a background of declining enrollments in physics and increasingly hard times for the discipline, a report that the master's degree in physics is helpful for success in many fields, including engineering, administration, and education. "Our investigation," the report states, "reveals that, among managers, physics knowledge and, in particular, the analytical skills which a physics education confers on its recipients have had a dramatic effect on their subsequent careers." The conclusions are drawn from a sample of members of Sigma Pi Sigma, the undergraduate honorary physics society, and are said to apply to those who ended schooling with a physics master's as well as those who went on to other degrees. The report, by Donald Rosdil, is the first in an AIP series on career experiences of physics graduates.

Underemployment Among Postdoctorates: 1994 Society Membership Survey (Publication R-399.1; 4 pp.), a mixed report on the mood of physics postdocs, noting that "an overwhelming majority find their work professionally challenging" and regard their appointments "as acceptable and appropriate initial employment." The report notes, however, that "the temporary nature of a postdoctoral appointment may contribute to a feeling of underemployment," and "a significant portion of PhDs accepted postdocs because they could not find permanent positions." The authors are Raymond Y. Chu and Jean M. Curtin.

Order from: American Institute of Physics, Education and Employment Statistics Division, One Physics Ellipse, College Park, Md. 20740-3843; tel. 301/209-3070; fax 301/209-0843; e-mail: <stats@aip.org>.

From the General Accounting Office, no charge:

Drug and Alcohol Abuse: Billions Spent Annually for Treatment and Prevention Activities (GAO/HEHS-97-12; 68 pp., no charge), estimates that nearly $7 billion was spent on drug- and alcohol-abuse programs in 1994 by federal, state and local governments and philanthropic organizations, but cautions that the expenditures are difficult to track, noting, for example, that "federal data do not include alcohol-only programs." Spending is listed for federal agencies, the 50 states, and 25 foundations. There's also a bibliography of 13 GAO reports on drugs and alcohol dating back to 1991. The report was requested by Chairman Bob Livingston of the House Appropriations Committee and Chairman John Porter of the Appropriations Subcommittee on Labor, Health and Human Services, Education and Related Agencies.

Peer Review: EPA's Implementation Remains Uneven (GAO/RCED-96-236; 26 pp.), credits the Environmental Protection Agency with progress towards its stated goal of peer review for its scientific and technical output, but reports confusion among EPA staff "about what peer review is," uneven application of peer-review policies, and poor oversight of the review process.

Order from: USGAO, PO Box 6015, Gaithersburg, Md. 20884-6015; tel. 202/512-6000; fax 301/258-4066.

From the House Science Committee, Democratic Membership:

Environmental Science Under Siege: Fringe Science and the 104th Congress (42 pp., no charge), issued by Rep. George Brown (D-Calif.), senior Democrat on the Committee, a scornful, documented counterattack against Republican charges that environmental researchers supported by federal agencies misrepresented global warming, ozone depletion, etc., to promote an anti-industrial political agenda. The charges were made last year in three hearings titled "Scientific Integrity and the Public Trust," chaired by Rep. Dana Rohrabacher (R-Calif.).

Order from: House Science Committee, Democratic Membership, 822 O'Neill House Office Building, Washington, DC 20515; tel. 202/225-6375; fax 202/225-3895; Internet <http://www.house.gov/science_democrats/welcome.htm>.

From the American Chemical Society, State and Local Government Affairs Program:

State and Local Reaction (no charge), six-times-a-year newsletter, with four issues devoted to public policy concerning elementary and secondary science education and two focused on environment and technology.

Order from: American Chemical Society, State and Local Government Affairs Program, attn. Carolin Head, 1155 16th St. NW, Washington, DC 20036; tel. 202/872-4391; fax 202/872-6206; e-mail: <slga@acs.org>.

From the Royal Institute of International Affairs:

Publications Catalogue 1996/7: Energy and Environmental Programme (15 pp., no charge), lists about 50 current and forthcoming books and reports from this London-based, independent think tank, a prolific source of studies of policy, politics and economics.

Order from: The Royal Institution of International Affairs, Chatham House, 10 St. James's Square, London SW1Y 4LE, UK; tel. 44/0171-957-5700; fax 44/0171-957-5710.

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In Print

Official reports and other publications of special interest to the research community

(Copies of publications listed here are available from the indicated sources—not from SGR)

From the Organization for Economic Cooperation and Development (OECD):

Science, Technology and Industry Outlook: 1996 (308 pp., $72), first of a new OECD series focused on industry and scheduled for biennial publication, covering trends in productivity, research expenditures, high-tech industrial output and trade, patents, employment, etc., in the 27 member nations of the Paris-based OECD, plus non-member eastern bloc and Asian nations. Statistical data are presented in nearly 100 tables, along with profiles of the individual nations. A discussion of the characteristics of the "knowledge-based" economy emphasizes that a clear understanding is lacking on the relationship between R&D inputs and economic growth. The report was prepared by the OECD's Directorate of Science, Technology and Industry, based at OECD headquarters, 2, rue Andre-Pascal, 75775 Paris, CEDEX 16, France.

In the US, order the report from: OECD Publications and Information Center, 2001 L St. NW, Suite 650, Washington, DC 20036-4922; tel. 202/785-6323; fax 202/785-0350; also available from bookshops and OECD offices in many major cities around the world.

From the National Academy of Sciences (NAS):

Conflict and Cooperation in National Competition for High-Technology Industry (242 pp., $39, plus $4 for shipping), from the first project sponsored by the German-American Academic Council, founded in 1993, a report warning that competition in high-tech products is "a source of growing international friction," as well as an impediment to scientific cooperation. Among several recommendations: markets for high-tech industries "should be open and contestable," and government R&D support should generally not extend to product development. The prose is turgid and cautious, reflecting national policy differences and sensitivities about the proper government role in promoting high-tech industry. The report is a cooperative project of the Hamburg Institute for Economic Research, the Kiel Institute for World Economics, and the National Research Council, the working arm of the NAS. The Project Steering Committee, with members from six nations, was co-chaired by Erhard Kantzenbach, President of the Hamburg Institute, and Alan Wm. Wolff, Managing Partner of the Washington law firm Dewey Ballantine. Charles W. Wessner of the NAS staff was Study Director.

Health Consequences of Service During the Persian Gulf War: Recommendations for Research and Information Systems (193 pp., $33, plus $4 for shipping), by the Institute of Medicine (IOM), health-policy branch of the NAS, says research on medical ailments reported by Gulf War veterans is hampered by scattered, skimpy and inconsistent recordkeeping by the Departments of Defense and Veterans Affairs. The study, requested by Congress, says the two Departments should "continue to work together to develop, fund, and staff medical information systems that include a single, uniform, continuous, and retrievable electronic medical record for each service person." The report was produced by an IOM committee chaired by John C. Bailar III, Chairman of the Department of Health Studies, University of Chicago, and was issued shortly after the Pentagon belatedly acknowledged that US troops may have been exposed to nerve gas and other chemical agents when an Iraqi munitions dump was destroyed shortly after the war. Bailar states in an introduction to the report that the acknowledgement raises questions about the "completeness of exposure information" provided by the Defense Department. Diane J. Mundt of the IOM staff was Study Director for the report.

Order from: National Academy Press, 2101 Constitution Ave. NW, Washington, DC 20418; tel. 1-800/624-6242 or 202/334-3313.

From the Third International Mathematics and Science Study (TIMSS):

A series of publications, some available, others forthcoming, based on data on over 500,000 students in some 40 countries, and described as far more extensive and sophisticated than prior attempts at international comparisons. The research was supported by the National Science Foundation.

For ordering information: Dr. William Schmidt, US National Research Coordinator, TIMSS Curriculum Analysis Project, Michigan State University, College of Education, 463 Erickson Hall, East Lansing, Michigan 48824; tel. 517/353-7755; fax 517/432-1727; e-mail: <bschmidt@pilot.msu.edu>.

A related publication from the National Academy of Sciences:

Mathematics and Science Education Around the World: What Can We Learn? (23 pp., no charge), a guide to the planned series of reports from TIMSS and the Study of Science and Mathematics Opportunities, a subset of research focused on France, Japan, Norway, Spain, Switzerland and the US.

Order from: National Academy of Sciences, Mathematical Sciences Education Board, 2101 Constitution Ave. NW, HA-450, Washington, DC 20418; fax 202/334-1453; e-mail: <timss@nas.edu>.

From NASA's Office of Space Access and Technology:

Space Technology Innovation (24 pp., no charge), bimonthly focused on tech-transfer opportunities from research supported by NASA, with descriptions of programs and names and contacts at NASA centers, plus on-line addresses, lists of publications, etc. The September/October issues summarizes various contractual mechanisms for collaborations involving NASA research facilities.

Order from: Space Technology Innovation, NASA, Code XC, 300 E St. SW, Washington, DC 20546; tel. 202/358-4562;fax202/358-3878;e-mail: <innovation@hq.nasa.gov>.

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